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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,048

07/14/2006

Koichiro Tanaka

0756-7744

2500

31780

7590

04/01/2009

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EXAMINER

PAIK, SANG YEOP

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,048	<b>Applicant(s)</b> TANAKA ET AL.	
	<b>Examiner</b> SANG Y. PAIK	<b>Art Unit</b> 3742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/4/08, 7/14/06</u> .   | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 6-8, 10 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (US 2004/0119955) in view of Tanaka (US 6,393,042) or Yamazaki et al (US 6,524,977).

Tanaka '955 shows the apparatus and method claimed including a first laser oscillator irradiating a first laser beam, a second laser oscillator delivering a second laser beam through an optical fiber to overlap or cover a range irradiated by the first laser beam on the irradiation surface, a cylindrical lens for condensing a laser beam, and the irradiation surface moving in a first and a second direction relative to the first and second laser beams. But, Tanaka '955 does not show a slit for blocking an end portion of the first laser beam.

Tanaka '042 shows that it is well known to provide a slit to shape a laser beam, and Yamazaki also teaches that it is known in the art to provide a slit to block off the end portion or the peripheral portion of the laser beam.

In view of Tanaka '042 or Yamazaki, it would have been obvious to one of ordinary skill in the art to adapt Tanaka '955 with a slit in the first laser beam to block off

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the end or peripheral portion of the laser to allow the more energy concentrated portion of the beam to pass through the slit and irradiate onto the irradiation surface.

3. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka '955 in view of Tanaka '042 or Yamazaki as applied to claims 1, 3, 6-8, 10 and 13-15 above, and further in view of Dunskey et al (US 6,791,060) or Dickey et al (US 5,864,430).

Tanaka '955 in view of Tanaka '042 or Yamazaki shows the method and apparatus except a diffractive optical element.

Dunskey or Dickey shows that it is known in the art to provide a laser oscillator with a diffractive optical element to provide the laser beam in a more uniformly irradiance profile.

In view of Dunskey or Dickey, it would have been obvious to one of ordinary skill in the art to adapt Tanaka '955, as modified by Tanaka '042 or Yamazaki, with a diffractive optical lens to provide the first laser beam having a more uniform irradiance laser profile to allow a more uniformly concentrated beam can be irradiated upon the irradiation surface.

4. Claims 4, 5, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka '955 in view of Tanaka '042 or Yamazaki as applied to claims 1, 3, 6-8, 10 and 13-15 above, and further in view of Inui et al (US 2006/0019474) or Okumura (US 6,800,541).

Tanaka '955 in view of Tanaka '042 or Yamazaki shows the method and apparatus including Tanaka '955 showing the first laser oscillator Nd:YAG or Nd:YLF as

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a continuous wave oscillator or a pulsed laser oscillator with the second laser Nd:YAG being a continuous wave oscillator, but Tanaka '955 does not show that the second laser is a pulsed laser oscillator.

Inui and Okumura show that it is known to provide the first and second laser oscillators that are of pulse laser oscillators irradiating upon the irradiation surface.

In view of Inui or Okumura, it would have been obvious to one of ordinary skill in the art to adapt Tanaka '955, as modified by Tanaka '042 or Yamazaki, with the second laser oscillator being a pulsed laser oscillator as an alternative laser source that would also adequately and sufficient irradiate and overlap with the first beam to form a desired crystallization on the irradiation surface.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANG Y. PAIK whose telephone number is (571) 272-4783. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SANG Y PAIK/

Primary Examiner, Art Unit 3742